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THE CURIOUS INSTANCE OF THE LIBRARY'S TRAVELLING POLL: DETERMINING OBSTACLES IN THE RESEARCH PROCESS

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Abstract

The role of libraries in co-facilitating timeous and successful completion of postgraduate studies and increased research output is accentuated in the current, competitive academic environment. Faced with this challenge, libraries need to probe new territory, expand boundaries of service delivery and collaborate with academic support services.

This paper describes an unconventional, visual method to explore service needs of researchers and research students. The method consists of an interactive poll which visually depicts the research lifecycle and allows respondents to point out arduous aspects in the research process. The poll is a collaborative project between the Library and the Information Technology Division of Stellenbosch University and was first administered during the Library's Research Week in August 2013. While the focus is on the design and applicability of the instrument, initial findings of the on-going project will also be reported.

The ultimate objective of the project is to enable the Library to create cohesive, collaborative support structures and services for research staff and students throughout the entire research project. This is envisaged through the identification of the prevalent obstacles by means of the interactive poll and subsequent collaboration with service partners on campus to address research support needs.

The paper will be of interest to academic librarians interested in experimenting with creative ways of interacting with its member community. It also addresses a holistic approach to research support and collaboration as a service strategy.

Keywords: academic library, research process, needs assessment, research life cycle, research support; collaboration; cross-divisional support services

Introduction

Research success is a vital component of higher education institutions' overall performance. Globally, it is believed that research productivity is a prerequisite for national prosperity and a means to provide solutions for social, economic and political challenges. Rankings and incentive schemes therefore aim to accelerate research output and academic performance, creating a vibrant and competitive climate. Opportunities abound for academic libraries to align and expand their services to respond effectively to these research challenges of the day.

At Stellenbosch University, the response to the new research climate has been to place substantial emphasis on research output and innovation; make concerted efforts to increase the ratio of postgraduate students; and to reduce the completion time of researchers. Faced with this compelling and demanding research context, presented Stellenbosch University Library and Information Service (SULIS) with the opportunity to expand services, build new alliances and to become more integrated in the institutional mechanisms which aim to elevate research productivity, relevancy and excellence. In pursuing these opportunities, it however became apparent that institutional research support lacked cross-divisional synchronisation. It was also disconcerting to notice a lack of systematic approach to the prioritisation of the University's research support projects. Lack of coordination and collaboration of service developments were other perturbing issues. As the most central and wide-reaching of the support services, the Information Technology Division and Library subsequently embarked on an expedition to address the factors which impeded cohesive service delivery.

What ensued was the appearance of a rather curious looking, wandering poll in the corridors of the Stellenbosch University Library. The poll had three main objectives: firstly, to determine the support needs of researchers; secondly, to use a creative, holistic and systematic method in the process of determining needs; and thirdly to point out the opportunities for collaboration among research support stakeholders.

This paper commences with an overview of the characteristic features of the changing research landscape and follows with a description of SULIS' project to broadly determine which aspects in the research life cycle provide difficulties for research students and staff. Finally recommendations are made about the usefulness of the survey method and about service tactics to create and improve integrated service support services to research students and staff.

Background

A changing research landscape

The dawn of the 21st century coincides with an unprecedented transformation of the research landscape. Various it is described as e-science, cyber science, or the fourth paradigm. Among others, the emergent scientific environment is characterised by ubiquitous access to indexed online content; optimum computation; a distinct emphasis on data; and collaboration (Soehner, Steeves, & Ward, 2010) (Council on library and information resources, 2008). In addition to the dynamic transformation of science practice, the world is also witnessing a deliberate alignment of academic research to national economic growth and social development. Altbach (1998) states that through centrality of the knowledge economy to 21st century development, higher education has assumed unprecedented importance, both within countries and internationally, because of its roles in educating people for the new economy and in creating new knowledge (Altbach 1998a). Kearney and Lincoln (2013) agree, noting that research universities are enveloped in a golden era in which they 'anchor globalisation and drive innovation, the economy and civil society'. In Altbach's words (Kearney & Lincoln, 2013) research universities are the "stepping stones to the knowledge economy". It is not surprising, that this heavy orientation to research fuels a concomitant pursuit of research excellence by institutions of higher education. In addition Altbach (2007) asserts that research has become increasingly competitive, with researchers and universities rushing to present results and patent or licence potentially useful discoveries or inventions. Science, in short, has become "high-stakes" and intensely competitive international endeavour.

The South African research agenda

Corresponding with global trends, research success is also a major concern for universities in South Africa. However, in the South African context this concern is deepened by the post-apartheid government's adoption of research as a national imperative. Seeking to redress pre-democracy imbalances, the government introduced the *Programme for the Transformation of Higher Education* (South African Department of Education, 1997) to encourage research productivity. The white paper proposed increased research activity as a prerequisite for national prosperity and a means to provide solutions to social, economic and political challenges while also gearing the country for participation in the knowledge economy. The Programme was backed up by statutory measures such as the *New Funding Framework (NFF)* for research and tuition, introduced by the Ministry of Higher Education and Training's (2003). The NFF offered monetary incentives to higher education institutions based on research output and student throughput. This course of events ignited a vibrant and competitive national research environment.

Stellenbosch University quest for research excellence

To attain a frontrunner position in this competitive environment, Stellenbosch University adopted the *Strategic framework for the turn of the century and beyond* (1999) which prioritised research as an academic activity at the University (Stellenbosch University, 2000). The emphasis on research brought about substantial accentuation of research output and innovation; the need to increase the ratio of postgraduate students and the reduction of research student's completion time, as strategic objectives (Stellenbosch University, 2008).

Indeed, a few years down the line, Stellenbosch University emerged as one of the leading research institutions in South Africa and on the continent. The University currently enrolls 28 000 students, of which 34 % are postgraduate. The staff component numbers 3 085 of which 975 are academic personnel. The eminent research status of the University is illustrated by it having the highest number of weighted research outputs per academic staff member of all South African universities. The University also appears on three reputable international ranking lists - the QS World University Ranking, The Times Higher Education World University Ranking and the Leiden Ranking (Stellenbosch University, 2013).

Research support services respond

The elevation of research productivity in the new higher education research paradigm presents both a challenge and an opportunity for libraries. Indeed, this disposition is well documented in library science literature. Authors such as Wang (2013), Stokker (2013), Borchert and Young (2010), Radar (2002) and Strong (2012) all echo the sentiment that libraries face a vast, open canvas of new service possibilities in the changing research paradigm. To date, university libraries have responded to the challenge in various manners. Examples include the escalation of research-focused workshops and consultations; greater alignment of library collections with research strategy and practice; general overhauling of service structures (Mamtora, 2011); embeddedness in research teams (Monroe-Gulick, O'Brien, & White, 2013); data services and institutional repositories (Brandt, 2007). Parker (2012) describes a comprehensive approach to research support encompassing the entire research cycle being followed at Swinburne University of Technology. Following suit, SULIS has introduced various new-research focused services. The most prominent being the hosting of an Open Access publishing service; institutional repository services; and research productivity workshops (Raju & Schoombee, 2013).

Cross-divisional collaboration

Importantly, in the new higher education paradigm, possibilities also exist for creating new alliances and for greater intimacy with campus stakeholders. Gardner, Napier and Carpenter (2013) advocate this notion fervently, declaring that collaboration paves the way for creating innovative campus spaces and services. They argue that through the forging of alliances and merging of services and resources among campus partners, user needs are addressed and transformational changes initiated - changes that are broader in scope than those of traditional library functions. They argue that collaboration allows for constant revision and reinvention based foremost on needs, complemented by further research and assessment. These notions are supported by Stebelman, Siggins, Nutty & Long (1999) who include university administrators as important library partners.

Harbouring similar sentiments, SULIS created a grassroots level research support forum in 2012 to engage on research service related topics of mutual interest. The forum includes the Writing Lab, Postgraduate and International Office, Research Development Division, Information Technology, Teaching and Learning and Community Interaction. The group gathers quarterly to discuss diverse issues based on the respective members' focus, emphasis and interest. Service topics dominant in discussions include synchronisation of workshops; communication with users; mutual awareness of services and resources; and reciprocal marketing. Despite the advantages of closer relations, collaboration has yet to be optimised though, as respective divisions still tend to weight service demands according to their own perspective and go about addressing it accordingly.

What do researchers want?

Whether services for researchers are integrated (through partnerships or collaborative efforts) or provided independently by the library, alignment with user needs is crucial. According to Simons, Ke & Wallace (2013) it is essential to understand how users' needs are changing in the transforming research environment. Brown and Dumouchel (2007) vow that "the user is powerful and changing". They emphasise the fact that we must attend to what our users are requiring of us and consider how can we adapt our services to correspond. Understanding what researchers want in the transforming information domain has however proven to be a difficult quest. The RIN and RLUK report *Researchers' Use of Academic Libraries and their Services Determining* (2007) notes that the needs of researchers are notoriously difficult to determine. The report quotes a librarian saying "It's hard to serve researchers properly because it's almost impossible to find out what they want". The reason is attributed to researchers' independence; the fleetingness of individual relationships; and the increasing tendency for researchers to use services remotely. Foster and Gibbons (2005), to the contrary, were of the opinion that it was obvious what faculty members and university researchers wanted. They wanted to do their research, read and write about it, share it with others, and keep up in their fields!.

In addition to determining researchers needs, the Stellenbosch University IT Division wanted to *prioritise* researchers' service. Kriel (2013) expressed her concern as follows: "The IT Division does not have an effective means of gauging the needs of individual researchers, except by consulting the divisions that support the community. The mapping [of service requirements] tends to indicate a lack of input from individual researchers who may well prioritise very differently with a bias towards actions that would serve to improve their personal productivity". Following this declaration, an objective and systematic assessment of service needs, from a users perspective, became a serious aspiration.

Research life cycle

To understand researchers' needs from the viewpoint of prioritising support service design and uncovering cross-divisional collaboration potential, a systematic approach is vital. According to the OCLC's *Support for Research Workflows* (2011) the research life cycle provides an ideal model to systematically map a wide range of research activities from the development of the investigative hypothesis through to final dissemination and evaluation. Wiklund (2013) agrees that using the research life cycle as a model provides an effective map to structure and analyse research activities and develop the support required to flourish in this environment. Added advantages of the research life cycle, are that it presents research activities in a researcher-centred manner and is able to concisely relate library (and other divisions') support services to the standard stages of research with which researchers are familiar (Vaughan et al. 2013).

Methodology

A "Library Research Week" in 2013 presented a fitting opportunity to address a number of the issues identified. In particular it presented the opportunity to engage with researchers and to determine their support needs while ultimately contributing to the research success of the University. Through informal discussion, staff members of the Library and IT Division gradually developed the idea for an activity to determine researchers' needs in a researcher-centric way using a systematic and contextual framework to guide the process.

However, noting the disadvantages of each of the methods, and since a large scale LibQual survey had been administered by the Library the previous year, it was decided to follow a fresh approach. The final proposal comprised of a visual display for soliciting intuitive feedback from researchers about the obstacles they encounter in the research process.

[illegible]

Figure 1: Interactive, visual poll

What Faculty are you in? (put an X in the appropriate block)				
AgriSciences	Arts & Social Sciences	Econ & Mgmt Sciences	Education	Engineering
Law	Medicine & Health Sciences	Military Science	Science	Theology
What is your research role? (put an X in the appropriate block)				
Researcher	Doctoral student	Master's student		

What?	An interactive, visual poll which allows respondents to point out obstacles they experience in their research project anonymously and voluntarily.
Who?	Researchers, Doctoral students, and Master's students are invited to take part in the poll. The results will be made available to interested research support divisions upon request.
How?	If you are experiencing any obstacles as you progress with your research, write them down on the cards provided. Please use one card per obstacle. Use the drawing pins provided to pin your card/s to a corresponding activity on the research activities diagram.
Why?	To give SU research support divisions added insight into the obstacles faced by individuals doing research.
When?	This poll will be available during the course of the Library and Information Service's Research Week (12-16 Augustus). An initial discussion of the feedback will take place on 15 August at 14:00 in the JS Gericke Library Auditorium and is open to all interested parties.

Figure 2: Poll card (back)

The back of the “poll card” also provided information to prospective participants about the study using the following “what, who, how, why and when” format:

- **What?** An interactive, visual poll which allows respondents to point out obstacles they experience in their research project anonymously and voluntarily.
- **Who?** Researchers, Doctoral students, and Master's students are invited to take part in the poll. The results will be made available to interested research support divisions upon request.
- **How?** If you are experiencing any obstacles as you progress with your research, write them down on the cards provided. Please use one card per obstacle. Use the drawing pins provided to pin your card/s to a corresponding activity on the research activities diagram.
- **Why?** To give SU research support divisions added insight into the obstacles faced by individuals doing research.
- **When?** The poll will be available during the course of the Library and Information Service's Research Week (12-16 Augustus). An initial discussion of the feedback will take place on 15 August at 14:00 in the JS Gericke Library Auditorium and is open to all interested parties.

With the poll, a small-scale study was intended, making use of a convenience sample involving “readily available respondents” (Boone and Kurtz, 2005:267) whom in this case were researchers present in the Library and Information Service's Research Commons and foyer during Research Week. The aim of the study was therefore not to produce “generalisable knowledge” but rather to generate insights useful to IT and the Library about the needs of researchers. The design of the study was intended to attract attention and to solicit spontaneous participation. Individuals therefore self-selected to participate. A pre-testing with five student researchers indicated that the question posed and participation method was intuitively clear to them.

The research life cycle

The diagramme of the research lifecycle and its subjacent processes on the pin board was intended to provide respondents with a systematic and contextual framework to guide their responses. It also aimed to encourage intuitive participation. The life cycle model posed as an analytical tool as well as a way to structure the information collected. Through its visualisation of research activities, it was considered an ideal way to garner information about researcher needs throughout their research endeavours.

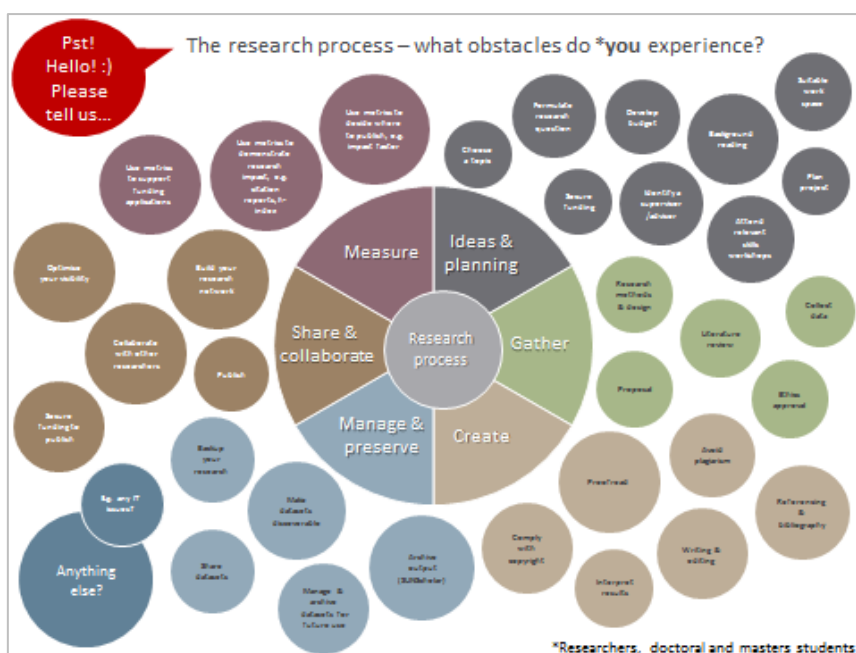


Figure 3: Graphic representation of the research life cycle

The graphic representation of the research lifecycle drew on various lifecycle diagrammes such as developed by the University of Curtin (n.d), University of Minnesota Libraries (2006), Patel (2011) and the JISC Research 360 Project (n.d). The final version of the life cycle presented in the survey was however a unique diagramme featuring thirty four activities within six life cycle phases.

The six phases and subjacent activities were as follows:

- 1) **Ideas and planning**: choose a topic; formulate research question; develop budget; secure funding; Identify a supervisor/advisor; Background reading; Suitable work space; Plan project; Attend relevant skills workshops.
- 2) **Gather**: Research methods & design; Literature review; Proposal; Collect data; ethics approval.
- 3) **Create** - Proofread; comply with copyright; avoid plagiarism; referencing and bibliography; writing and editing; interpret results
- 4) **Manage and preserve** - Back up your research; make datasets discoverable; archive output; manage and archive datasets for future use; share datasets
- 5) **Share and collaborate** - optimise your visibility; build your research network; publish; collaborate with other researchers; secure funding to publish
- 6) **Measure** - Use metrics to support funding applications; use metrics to demonstrate impact; use metrics to decide where to publish

Data collection

The interactive, visual survey was administered during the Library's research week in August 2013 alternating between the Research Commons and the foyer of the JS Gericke Library as conducive locations. Administering the survey as part of a marketing event had multiple intentions. The poll demonstrated the Library's alignment with researchers as the primary audience of the research week; it alluded to services related to various stages of the research process; solicited feedback about user needs; and established dialogue with respondents by encouraging researchers to articulate their frustrations. The holistic scope of the survey demonstrated a cohesive approach to supporting researchers as opposed to the more pervasive silo-based research support model generally experienced on campus. The poll also satisfied our requirements in terms of being creative, innovative, low-cost and it did not require staff time. The Library, perceived as a central and politically neutral space, therefore presented an appropriate setting to engage with researchers about their needs, while, as a Research Week activity the poll served both as a feedback instrument and a promotion of library services.

Results

In total, 89 respondents participated in the poll. Although respondents were asked to indicate their study level or user status, almost half failed to do so. Of the respondents who did indicate their user status, 47 % were master's students, 10% were doctoral and 1% was honours. Respondents represented nine faculties of which the Arts and Social Sciences faculty (30%) surpassed other faculties by a large margin. Again, a large number (37%) of respondents failed to indicate their faculty relation. Practically all respondents (97%) provided written comments on the cards they pinned to the notice board.

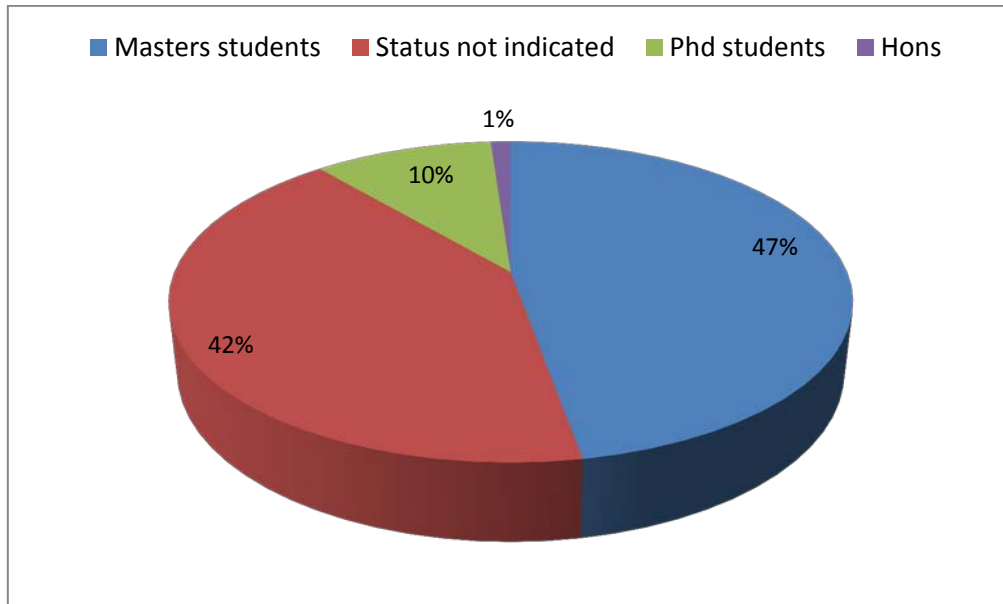


Figure 4: Respondents by study level

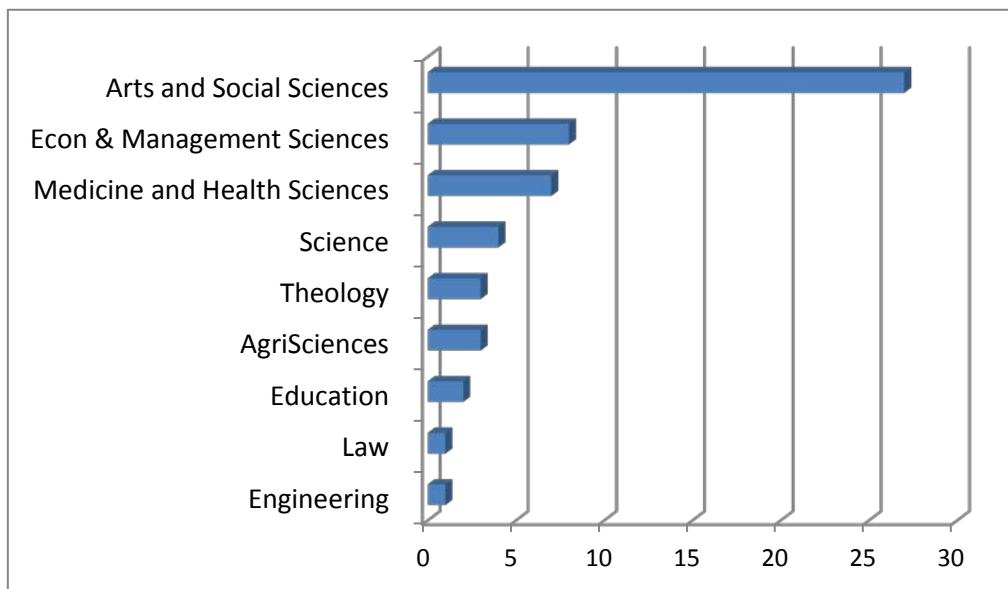


Figure 5: Respondents by faculty (excluding where none indicated)

Responses were categorised in three groups. Firstly, by the research life cycle **phase** that was indicated as posing an obstacle; secondly by the specific **activity** within the phase; and thirdly by the respondents' **comments**.

Research phases presenting obstacles

As illustrated in Figure 6 below, the research phase identified as presenting the most obstacles was “Create”. The three most troublesome activities in this phase were “writing and editing”; “referencing and bibliography”; and “interpreting results”. Following closely was the “Ideas and planning” phase, where activities such as “secure funding” and “choose a topic” were emphasised as presenting obstacles. The third most obstacles appeared in the “Anything else?” category where many comments related to finding motivation and fighting procrastination. The “Gathering” phase presented the fourth most obstacles with “literature review” identified as the most problematic activity. With regards to “Share and collaborate” phase, respondents commented on difficulties regarding “collaboration with other researchers”, “building a research network”, “optimising visibility” and “secure funding to publish”. No obstacles were identified in the measuring phase. This may possibly stem from the fact that respondents were predominantly postgraduate students who were not yet active authors and also not involved with research evaluation practices.

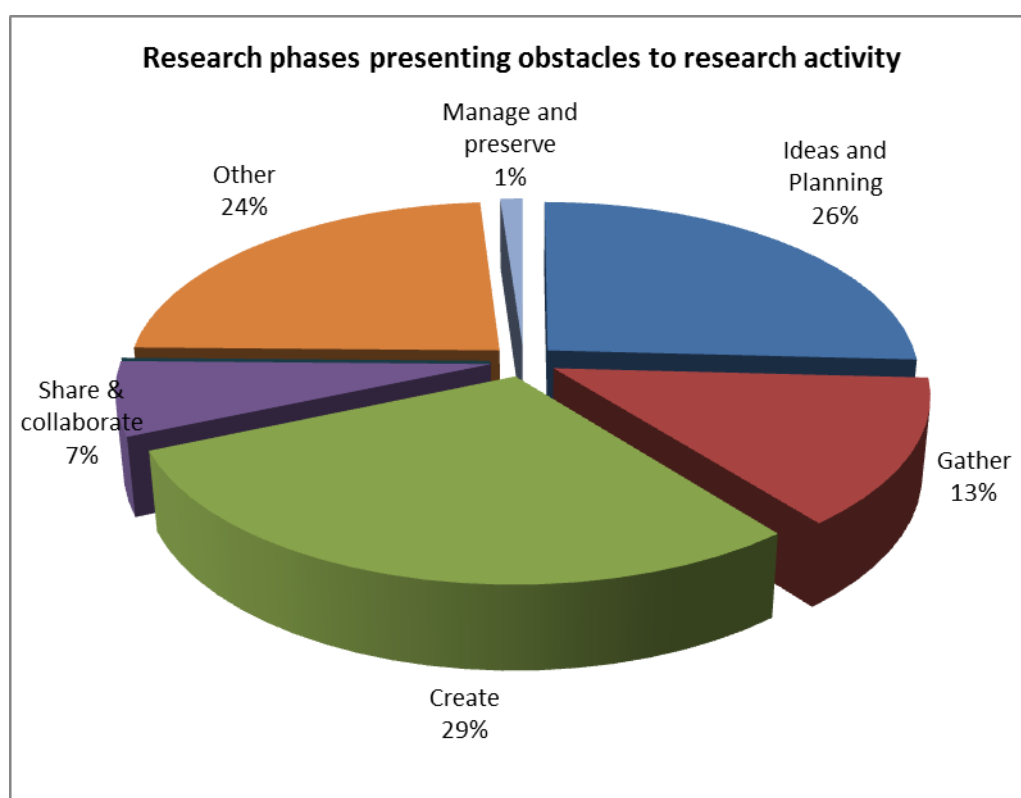


Figure 6: Research phases presenting obstacles to research activity

Research activities presenting obstacles

In listing the identified troublesome research activities, irrespective of the phase concerned, “general” came out on top of the list. In this category, respondents referred predominantly to emotional issues and personal skills such as lack of motivation, feelings of inadequacy, procrastination, time management and the student-supervisor relationship. “Writing and editing” emerged as the second most problematic research activity, followed by “securing funding”, “interpreting results” and “IT”. Also ranked relatively high, were “referencing and bibliography”, “choosing a topic” and “suitable space”. A complete list activities considered as presenting obstacles is ranked in Figure 7.

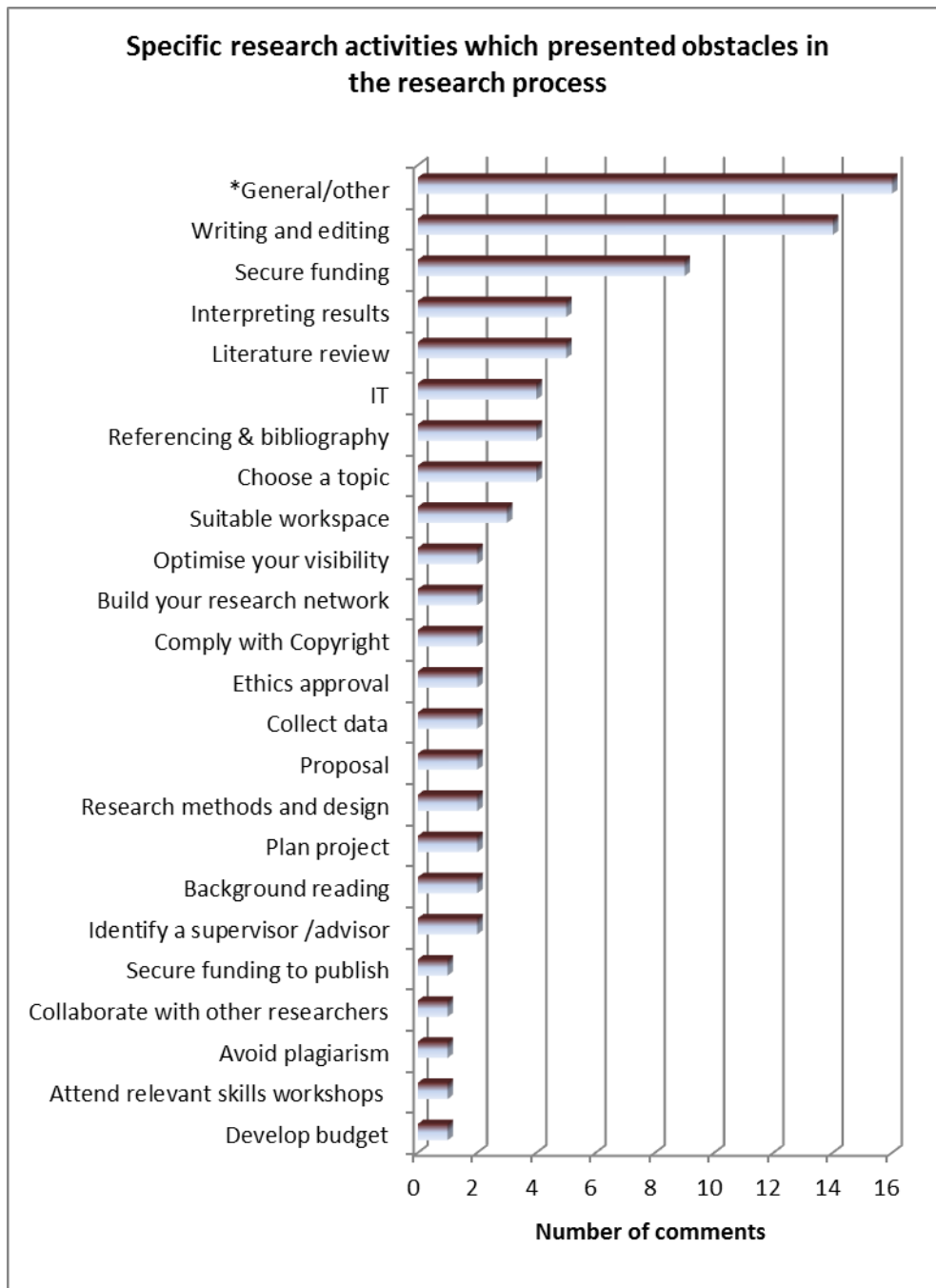


Figure 7: Specific research activities indicated as obstacles in the research process

Analysis of respondents' comments

The comments provided by respondents were categorised using In Vivo codes. In Vivo coding facilitates the practice of assigning a label to a section of data using a word or short phrase taken from that section of the data (King, 2008). The aim being to ensure that concepts stay as close as possible to research participants' own words or use their own terms because they capture a key element of what is being described.

Thirty seven phrases were selected as In Vivo codes to represent the obstacles mentioned in the comments received. The codes were subsequently ranked according to the number of comments which corresponded with the phrase. According to this process, the five main obstacles were identified as "writing" (14 comments), "funding" (12 comments), "supervisor" (7 comments), "motivation" (6 comments) and "feel inadequate" (5 comments). Figure 8 presents a graph of the twenty obstacles mentioned most often.

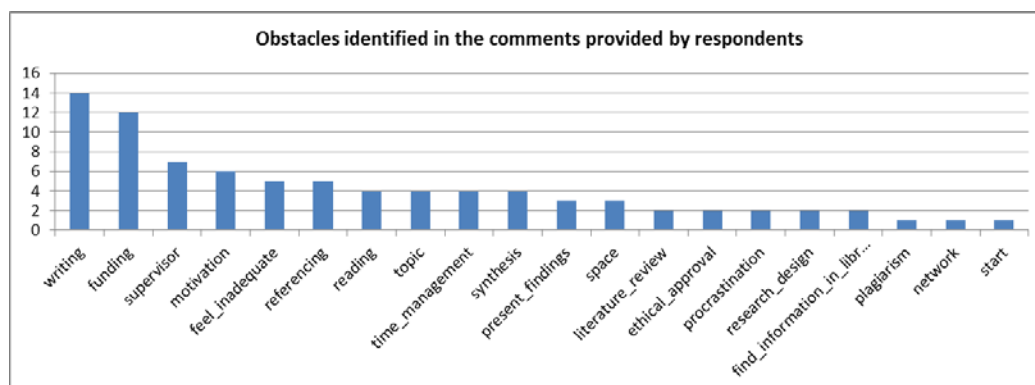


Figure 8: Obstacles most frequently identified in respondents' comments

It is clear from the results of the poll that writing; finding funds; the supervisor-student relationship; and emotional and personal skills such as confidence, motivation and time-management present the most challenges for students in the course of completing a research project. This feedback corresponds to a large degree with a report on 'The Research Experience of Young Scientists in South Africa' published by the South African Young Academy of Science (SAYAS) in 2013 where funding and mentorship/supervisory issues were emphasised as significant challenges for postgraduate students in South Africa. If an integrated service model was desired, it was clear that the Library should investigate its role in addressing these blatant and crucial needs of research students.



Figure 9: A word cloud representing comments organised in In Vivo Codes

Traditional library services, such as referencing and finding information, were also identified as obstacles although these were not the greatest stumbling blocks. Referencing obstacles referred to both referencing standards (Harvard, APA, etc.) and reference management systems (Endnote, RefWorks, etc.). Frustration with "finding information" referred mainly to information overload and sources not available in the Library. Obstacles manifested in terms of complying with copyright; building a research network; researcher visibility; finding suitable workspace; choosing a topic; and the literature review.

These obstacles can be suitably addressed by optimising resources which the Library has to its disposal. In particular, Scopus to address difficulties experienced with literature review; Mendeley to alleviate hurdles related to reference management; and Scival to improve research

network building, finding funding opportunities, getting to know a subject area and to elevate researcher visibility.

Conclusion

Research success, both in terms of student through-put and research output, is a major concern for all universities as it forms a vital component of a university's overall performance. In the South African context this concern is intensified by a robust national agenda and an incentive scheme aimed to accelerate output and productivity. In this compelling and demanding research context, it is critical for academic libraries, along with other research support divisions, to examine current services for researchers and to upscale according to new trends and demands.

If regarded as a preliminary exercise, the interactive visual poll showed great potential as a holistic and systematic manner to reveal researchers' service needs and opportunities for cross-divisional collaboration. Responses to the small scale project showed that young scientists seem not to be struggling so much to find subject-related information but that they are battling important peripheral issues which may ultimately impede their success. In this, an opportunity is presented for the Library to work in tandem with other support divisions to contribute to the overall success of researchers. For example, the central position of the library makes it an excellent platform to expose funding opportunities; provide career-related information; create awareness for mentorship programmes; host industry talks and soft skills workshops; and provide opportunities for young scientists to create support structures among themselves.

The poll yielded additional benefits such as creating awareness for the library's role through-out the entire research life cycle. For some participants it even revealed processes and activities of which they were unaware. On the whole it enhanced the Library's visibility among researchers and created a lively dialogue between the Library and IT Division and researchers. Further administering of the poll is therefore recommended.

In order to respond to the challenges of the contemporary research environment, libraries must move beyond traditional library services and an independent style of functioning. The interactive, visual poll presents a strategy for unconventional engagement and an integrated and comprehensive approach to service delivery to ensure research success for both individuals and the University as a whole.

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